UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/372,899	01/17/95	HIROKI	M 07561173

E6M1/1028

SIXBEY FRIEDMAN LEEDOM & FERGUSON
SUITE 600
2010 CORPORATE RIDGE
MCLEAN VA 22102

EXAMINER	
LAO, L	
ART UNIT	PAPER NUMBER
2609	24

DATE MAILED: 10/28/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☒ Responsive to communication(s) filed on 7-16-96.

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-40 is/are pending in the application.

Of the above, claim(s) 1-20, 32-33 and 36-40 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 21-31 and 34-35 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

* U S GPO: 1996-409-280/40028

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba et al in view of Kanatani et al and applicant's prior art or Castleberry.

Inaba et al teach a driving method for an electro-optical device comprising a plurality of a plurality of scanning electrodes (2a); a plurality of data electrodes (2b); a light modulating layer (4) filled between the scanning electrodes (2a) and data electrodes (2b) to form a large number of pixels (see figure 7; column 1, lines 17-22 and column 2, lines 34-47) and a data signal having a plurality of pulses with a constant pulse width will be applied to a plurality of data electrodes (2b). The number of pulses will be changed depending on a tone of an image to be displayed (see column 8, lines 4-9).

Inaba et al fail to disclose a pixel consisting of a thin film transistor. Kanatani et al teach a driving method for an electro-optical device comprising a plurality of scanning electrodes (101); a plurality of data electrodes (102); a plurality of thin-film transistors (TFT) as a the switching

element for driving pixel electrodes (103); a data driver (200) for applying different half tone data signals, which are determined by the bit number of data signals (see column 16, lines 30-42); to data electrodes (102) and a scanning driver (300) for applying scanning signal to scanning electrodes (101)(see figure 20 and column 1, lines 23-55). It would have been obvious to have modified Inaba et al with the teaching of Kanatani et al, so to have a switch element to turn the pixel ON or OFF in a liquid crystal display.

Inaba et al as modified by Kanatani et al fail to apply an average data signal to a data electrode.

Applicant's prior art teaches an average voltage which can be applied to a pixel electrode (see figure 11 and page 5, lines 21-27).

Castleberry teaches a display system for applying an average data signal to a data line (column line) after a predetermined period (a certain number of row address times)(see figures 4, 5, 7 and column 6, lines 35-56).

It would have been obvious to have modified the combination of Inaba et al and Kanatani et al with the teaching of applicant's prior art or Castleberry, so as to eliminate cross-talk in a thin film transistor matrix addressed liquid crystal displays.

As to claims 22 and 27, Kanatani et al teach voltage values of pulses are constant (see figures 9(a) - 9(f)).

3. Claim 34 is rejected under 35 U.S.C. § 103 as being unpatentable over Inaba et al in view of Kanatani et al and (applicant's admitted prior art or Castleberry) as applied to claim 33 above, and further in view of Konodo.

Inaba et al as modified fail to disclose ROM means for storing gradated display data. Kondo teaches a display device comprising a display (20); a ROM (6) and a memory for storing gradation data (see figure 1; column 4, lines 45-61 and column 13, lines 33-36). It would have been obvious to have modified Inaba et al as modified with the teaching of Kondo, so the gradation data can be output from the memory when the display device needs.

4. Claim 35 is rejected under 35 U.S.C. § 103 as being unpatentable over Inaba et al in view of Kanatani et al, and (applicant's admitted prior art or Castleberry) and Kondo as applied to claim 34 above, and further in view of Kanayama et al and Kondo.

Inaba et al as modified fail to disclose a latch circuit, a flip-flop circuit and a counter. Kanayama teaches a method for a display device comprising a memory (11); a latch circuit (20); counters (PC1-PCN); a flip-flop circuits (FF_1-FF_N)(see figures 3, and 4; and column 6, lines 10-43). It would have been obvious to

have modified Inaba et al as modified with the teaching of Kanayama, since it is well known to apply a counter and logic circuits in a display device for processing image data.

5. Applicant's arguments with respect to claims 21-31 and 34-35 have been considered but are deemed to be moot in view of the new grounds of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maejawa teach a

display method for averaging information signals on two adjacent data lines.

8. Any inquiry concerning this communication should be directed to Lun-Yi, Lao at telephone number (703) 305-4873.

Lun-Yi, Lao/skf
October 21, 1996

RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
GROUP 2600